

What is claimed is:

1. A one-part polyurethane resin composition comprising:  
about 20 to 50% by weight of a hard segment, the hard segment reducing  
5 drying time and recoating time of a film coated by the composition; and  
about 50 to 80% by weight of a soft segment, the soft segment improving  
processing behaviors of the film including rolling and spraying properties.

2. A one-part polyurethane resin composition of claim 1, wherein the  
10 hard segment is at least one selected from the group consisting of an adduct of triol  
or a trimer of toluene diisocyanate, a trimer of 1,6-hexamethylene diisocyanate or a  
resin obtained by a Biuret reaction, an adduct of triol or a trimer of isophoron  
diisocyanate, and an adduct resin of triol or a trimer of diphenylmethane diisocyanate.

3. A one-part polyurethane resin composition of claim 1, wherein the soft  
15 segment is obtained by a reaction of at least one alcohol selected from the group  
consisting of polyether polyol, polyester polyol, neopentyl glycol, methylpropanediol,  
1,6-hexanediol, ethylene glycol, propylene glycol, 1,4-butylene glycol, 1,3-butylene  
glycol, trimethylol propane, trimethylol ethane and castor oil, and at least one  
20 isocyanate selected from the group consisting of toluene diisocyanate, 1,6-  
hexamethylene diisocyanate, isophoron diisocyanate and diphenylmethane  
diisocyanate.

4. A one-part polyurethane resin composition of claim 3, wherein the  
25 alcohol comprises at least one polyol selected from the group consisting of polyether  
polyol, polyester polyol and mixtures thereof, and at least one glycol selected from

the group consisting of neopentyl glycol, methylpropanediol, 1,6-hexanediol, ethylene glycol, propylene glycol, 1,4-butylene glycol, 1,3-butylene glycol, trimethylol propane, trimethylol ethane and castor oil.

5            5.        A one-part polyurethane resin composition of claim 4, wherein the polyol is a linear type and a content of polyol having a weight average molecular weight of about 500 to 3000 is about 30 to 70 % by moles with respect to total moles of the alcohol.

10           6.        A one-part polyurethane resin composition of claim 1, wherein isocyanate content (NCO % ) of the one-part polyurethane resin composition is about 4 to 15%.

15           7.        A one-part polyurethane resin composition comprising:  
a polyurethane resin mixture comprising  
              about 20 to 50% by weight of a hard segment, the hard segment  
              reducing drying time and recoating time of a film coated by the resin, and  
              about 50 to 80% by weight of a soft segment, the soft segment  
              improving processing behaviors of the film including rolling and spraying  
20            properties; and  
              a catalyst that is used in a copolymerization reaction of the hard segment and  
the soft segment.

25           8.        A one-part polyurethane resin composition of claim 7, wherein an amount of the catalyst used in the copolymerization reaction of the hard segment and the soft segment is about 0.01 to 1.0 % by weight based on a total weight of the hard

segment and the soft segment.

9. A one-part polyurethane resin composition of claim 7, wherein the catalyst is at least one selected from the group consisting of methyl morpholine, ethyl morpholine, triethyl amine, dimethyl benzyl amine, dimethyl ethanol amine, ethylene diamine, dimethyl lauryl amine, dimethyl piperazine, triethylene diamine, tetramethyl ethylene diamine, tetramethyl hexamethylene diamine, 1,3,5-tridiaminomethyl phenol, 1,4-diaza-(2,2,2)bicyclooctane, hexamethyl triethylene tetramine, lead naphthinate, lead octoate, dibutyl tin dilaurate, tin ethyl hexanoate, zirconium octoate and zirconium naphthinate.

10. A method of preparing a one-part polyurethane resin composition comprising:

preparing a hard segment and a soft segment; and

copolymerizing a mixture including about 20 to 50 % by weight of the hard segment, about 50 to 80 % by weight of the soft segment, and 0.01 to 1.0 % by weight of a catalyst based on a total weight of the hard segment and the soft segment.

11. A method of preparing a paint composition including a one-part polyurethane resin composition comprising:

preparing a hard segment and a soft segment;

copolymerizing about 20 to 50 % by weight of the hard segment and about 50 to 80 % by weight of the soft segment to prepare the one-part polyurethane resin composition;

dissolving the one-part polyurethane resin composition in a solvent; and

adding a catalyst to the dissolved one-part polyurethane resin composition to give the paint composition.

12. A method of claim 11, wherein an amount of the solvent used in dissolving the one-part polyurethane resin composition is about 5 to 20% by weight based on a total weight of the one-part polyurethane resin composition.

13. A method of claim 11, wherein the solvent is at least one selected from the group consisting of xylene, toluene and ketones.

14. A method of claim 11, further comprising stirring the paint composition including the catalyst.